RUST GEOTECH INC.

Spectral Gamma-Ray Borehole
Log Data Report

Borehole 22-12-06

Log Event A

Borehole Information

Farm : BY	**Tank :** BY-112	**Site Number :** 299-E33-96
N-Coord : 46,058	**W-Coord :** 53,563	**TOC Elevation :** 648.40
Water Level, ft :	**Date Drilled :** 12/31/1967	

Casing Record

Type : Steel-welded	Thickness : 0.280	ID, in. : 6
Top Depth, ft. : 0	Bottom Depth, ft. : 102	

Borehole Notes:
This borehole was drilled with a cable tool drilling rig, and the casing is apparently ungrouted and unperforated.

The top of the casing is about 2 ft higher than the general surface of the BY Tank Farm. The casing top is located near the intersection of two berms. All logging depths are measured from the top of the casing.

Equipment Information

Logging System : 2	**Detector Type :** HPGe	**Detector Efficiency:** 35.0 %
Calibration Date : 03/1995	**Calibration Reference :** GJPO-HAN-1	**Logging Procedure :** P-GJPO-1783

Log Run Information

Log Run Number : 1	**Log Run Date :** 9/18/1995	**Logging Engineer:** Kim Benham
Start Depth, ft.: 0.0	**Counting Time, sec.:** 100	**L/R :** L **Shield :** N
Finish Depth, ft. : 9.0	**MSA Interval, ft. :** 0.5	**Log Speed, ft/min.:** n/a

Log Run Number : 2	**Log Run Date :** 9/18/1995	**Logging Engineer:** Kim Benham
Start Depth, ft.: 100.0	**Counting Time, sec.:** 100	**L/R :** L **Shield :** N
Finish Depth, ft. : 8.5	**MSA Interval, ft. :** 0.5	**Log Speed, ft/min.:** n/a

Borehole 22-12-06

Log Event A

Analysis Information

Analyst : D.C. Stromswold

Data Processing Reference : P-GJPO-1787 Analysis Date : 2/27/1996

Analysis Notes :

Verification spectra collected before and after the log runs show that the logging tool was operating properly.

Gain drift was minimal during data acquisition, enabling a single energy calibration to be used during data processing for each run.

Repeatability was good at the overlap log section, being within the statistical uncertainties.

Correction factors for 0.25-in.-thick steel casing were used during data processing in order to be consistent with other boreholes around tank BY-112. If the casing thickness is 0.28 in., the calculated concentrations will be slightly low. No water correction was applied because the borehole was dry.

Cs-137, Co-60, and Eu-154 were the man-made contaminants detected in this borehole. Cs-137 was detected from the surface to about 38 ft and near TD. Co-60 was detected near 5 and 60 ft, and Eu-154 was detected only near 5 ft.

K-40 concentrations increased below about 54 ft.

See the Tank Summary Data Report for tank BY-112 for additional log analysis.

Log Plot Notes:

Separate log plots show the man-made (e.g., Cs-137) and the naturally occurring radionuclides (K-40, U-238, and Th-232). The natural radionuclides can be used for lithology interpretations. The headings of the plots identify the specific gamma rays used to calculate the concentrations.

A combination plot includes both the man-made and natural radionuclides, in addition to the total gamma derived from the spectral data and the Westinghouse Hanford Company (WHC) Tank Farms gross gamma log. The gross gamma plot displays the latest available digital data from WHC with no attempt to adjust the depths to coincide with the SGLS data.

Uncertainty bars on the plots show the statistical uncertainties for the measurements as 95-percent confidence intervals. Open circles on the plots give the minimum detection level (MDL). The MDL of a radionuclide represents the lowest concentration at which positive identification of a gamma-ray peak is statistically defensible.